

EnviHamManager USER GUIDE

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1. Introduction

To quote from the EnviHam introduction document [2]:

“Some categories of non-professional users (e.g. Education, Radio Listening, E.O. Enthusiast) have shown interest to receive near-real time Envisat [3],[4] data via the satellite Data Dissemination System (DDS) [7].

The major objective of the Envi-Ham project shall be to widen the knowledge of ESA E.O. missions among non-professionals, to retrieve possible observations done by users and to coordinate in a single non-commercial project a whole groups of users, which otherwise would be applicant for individuals ESA-approved scientific (CAT-1) projects. “

When you are registered for EnviHam, you will be sent the DDS reception software and licence key, and can download the very comprehensive **VISAT** viewer software [5]. (**VISAT** is an application built on the **BEAM** toolbox.) Details about how to set up the reception hardware and software can be found in GEC Quarterlies 25 & 26 and [8]. After that prepare for the data.

EnviHamManager is a companion to **EnviHamBrowse** (which displays on a world map the areas covered by the Envisat, amongst other things) by automating some of the tasks. Both programs are available from my www site [1].

EnviHamManager is intended to be run all the time DDS reception is running. Its main functions are to:

- Detect new files as they are received by DDS, as well as certain file reception errors.
- Automatically generate **DIMAT** and JPG files (both full-size and thumbnails) from received files.

DIMAT is the native file format used by **VISAT** and will therefore be loaded more quickly by **VISAT**. JPG is the familiar image file format, which is used **EnviHamBrowse** for previewing.

- Show thumbnails of the latest received files.
- Monitor the DDS file reception log. Provide graphs of counts of files received successfully and failed for various periods, to see how you are doing.
- Delete old or unwanted files to keep disk space under control.
- Report status of its functions.

I talk about ‘directories’ in this guide. Microsoft users may prefer the term ‘folders’. However, I’ve used directories most of my working life so I will stick to that.

Please email me at vf0123@btinternet.com with any bugs, comments, or suggestions.

2. What's New

The major new features in v 0.2.7 are:

- Catchup mode added.

Previously, **EnviHamManager** only processed new files as they came in. Files which had been received earlier but not processed were ignored. You can now choose to process existing files which are newer than a specified age.

Because this may result in a long queue for processing, a status page has been added to monitor how things are going.

- Option to delete raw files without processing.

Useful for unwanted files such as ATS and MER_RR.

- Finer control over cleanup & processing settings.

File cleanup ages can be set individually for each image type and file type.

Each stage of file processing can be selected, again individually for each image type and file type.

- Log pages now have choice of colour scheme.

I prefer a black background but you can set it back to the original white if you prefer.

- Settings validation and popup layout improved.

Hopefully more user friendly.

3. Installation

EnviHamManager is written in Perl and Perl/Tk. However, it is distributed as a self-contained **.exe** file which includes all the necessary Perl runtime files. You do not therefore need to have Perl installed. It runs under versions of Windows from at least XP onwards (and quite probably 2000). As it has a lot of interactions with the operating system, it will not run under Linux, although I could produce a version which does if there is interest (it's much easier using the OS under Linux than Windows!).

If you are not familiar with the different image and file types which are handled by **EnviHamManager**, have a look at section 5 which gives details.

3.1. Installing

EnviHamManager isn't installed as such - just unzip the downloaded file **EnviHamManager.zip** to somewhere convenient, say **C:\Program Files\EnviHamManager** for Windows XP, or **C:\Tools\EnviHamManager** for Windows Vista & 7.

From wherever you unzipped the files, just click on **EnviHamManager.exe** to run it, or setup a shortcut on your desktop. The first time you run **EnviHamManager**, or a new version of it, it will cache some files which will make it take longer to start - say 30 seconds - so be patient. Thereafter it will start normally.

3.2. Upgrading

Follow the same procedure if you are upgrading an existing installation. Providing that you unzip it to the same directory, your existing settings will be used. Defaults will be utilised where new settings have been added - however, it is worthwhile looking at the settings to see if you wish to customise any new ones.

3.3. Customisation

You will first need to do a little customisation to adapt to your setup - see section 4.8.1 for details on how to change these settings. This involves four things:

- **Receiving directory.**

This will need to be altered to wherever you setup the DDS reception software to put the files. The default is set to my location - yours will be different.

- **Data directory.**

This will need to be altered to wherever you want **EnviHamManager** both to store the received files and the converted files it generates. The default is set to my location - yours will be different.

If you are receiving the files on one PC and running **EnviHamManager** on another, obviously the receiving and data directories will be different.

If you are receiving and processing on the same PC, you can if you wish set both directories the same, although I recommend that you keep them different as it keeps the functions separate.

- **Location of the pconvert program.**

This is a data-conversion program provided with **VISAT** and is located in the same directory as **VISAT**. The default setting is adequate for many versions of Windows. Windows 7 64-bit users will however probably need to replace **C:\Program Files\...** with **C:\Program Files (x86)\...**

- **Location of the DDS files log.**

This is the log file **files.log** kept by the DDS reception software on the receiving PC. If **EnviHamManager** is running on the receiving PC, then the default **C:\Program Files\Envisat DDS\files.log** may work, although Windows 7 64-bit users will probably need to replace **C:\Program Files\...** with **C:\Program Files (x86)\...**

If however the PCs are different, a share will need to be set up. This is a little more difficult if you have installed DDS in **C:\Program Files** since Windows from XP onwards will not allow you to share **C:\Program Files**, so you can't just set up a share to the **C:** drive. It will allow you to share subdirectories, however, so you will have to setup a share to **C:\Program Files\Envisat DDS** and use that.

(This is a very brief description. If you are using separate PCs anyway, you will probably know about sharing drives - however, let me know if you need help with getting shares set up.)

Additionally, please check that the settings for the following meet your requirements:

- **Data cleanup.**

Check that the settings for automatic cleanup of older data meet your needs - especially those concerned with deleting old **compressed N1** raw data files, so that you don't lose data which you wanted to keep.

- **JPG conversion profiles.**

When generating JPG images, these tell the converter how to use the raw multi-spectral images to produce a false-colour result

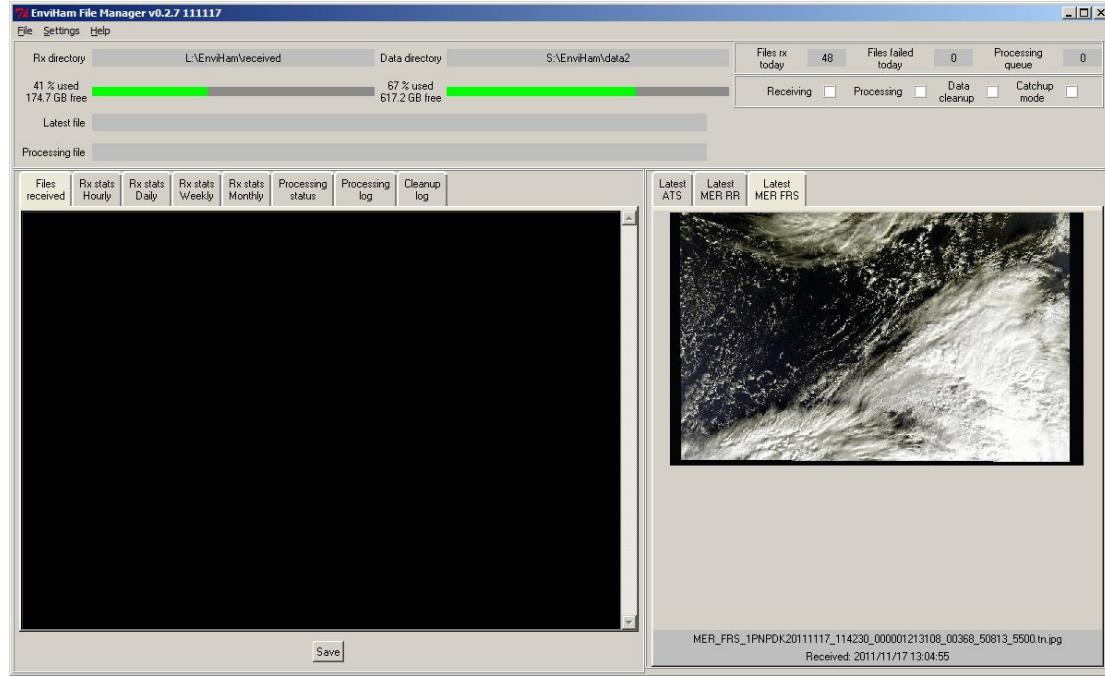
See section 4.8.1 for details on how to change these settings. Also please review the other default settings to ensure that they are suitable.

If any settings are wrong you will be warned when you start the program.

4. Usage

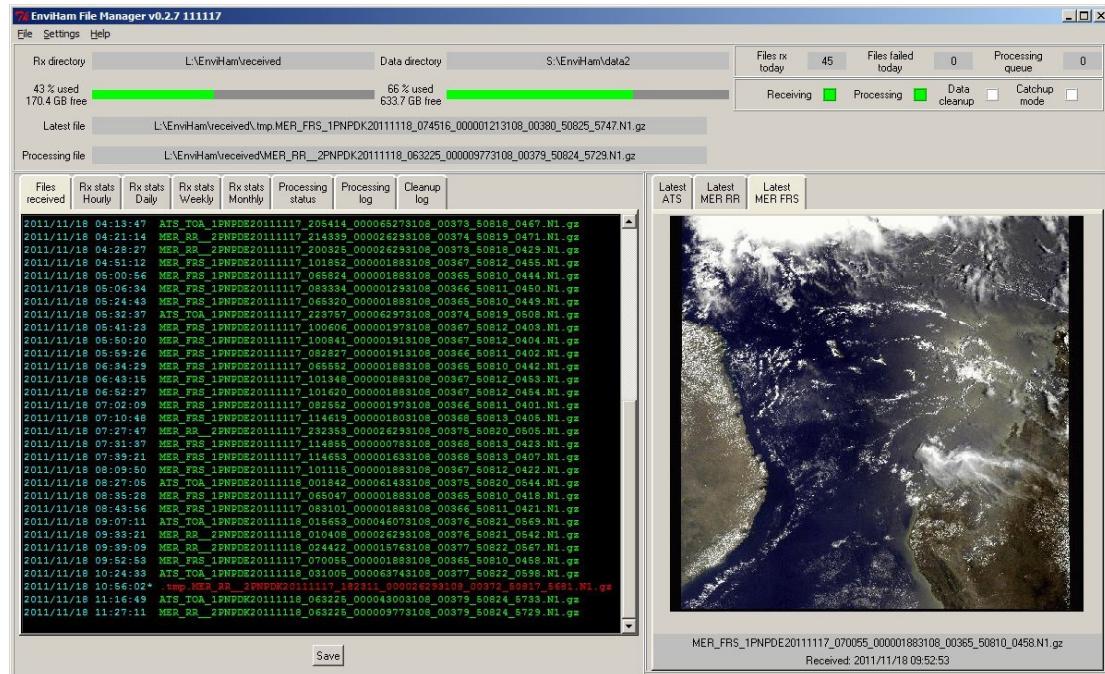
4.1. Getting Started

EnviHamManager is very simple to use. On startup, you will see the following:



The picture on the right just shows the last picture you received, and will be blank if you haven't received anything before.

After it has been running for a bit, assuming that DDS is working, you should see



Leave it running, minimised if you like, as long as DDS is running.

4.2. Data Processing

Once a file has been received, various processing is performed on it, principally by moving it from the receiving to the data directory and then generating **DIMAT** and JPG files. It is possible to select just what processing is performed for each image type - see section 4.8.1.2 for details. In particular, unwanted raw data files can just be deleted. The presence of **DIMAT** and JPG files speeds up browsing and **VISAT** usage in **EnviHamBrowse**. The original raw **N1gz** data files, as received, are not affected.

When generating JPG files, a thumbnail image file will also be created for use both by **EnviHamManager** and **EnviHamBrowse**. Therefore generation of JPGs should not normally be inhibited since thumbnails will not be available.

Conversion uses the **pconvert** program which you will have installed as part of **VISAT**.

One thing which JPG conversion requires is the specification of a profile, which tells the converter how to use the raw multi-spectral images to produce a false-colour result. Profiles are provided as part of the **VISAT** package, or, for enthusiasts, can be generated manually using **VISAT**. Which one is used in the conversion is selected, for each file type, in **Settings** - see section 4.8.1.2.

4.3. Catchup Mode

In versions of **EnviHamManager** prior to 0.2.7, only newly-received files were converted. If you had files present which had not been converted when **EnviHamManager** started, they were ignored. Although manual conversion can be done using **EnviHamBrowse**, a catchup mode has now been added so that files newer than a specified age will also be processed - see section 4.8.1.1 as to how to set this up.

I recommend that you leave catchup mode on with an age of at least one day. This means that, if you have **EnviHamManager** shut down for a short time, any files received during that period will still be processed. This applies particularly to a 2-PC setup.

4.4. Data Cleanup

Once a day, at a specified time, old files may be deleted according to the age of each file. Different ages may be specified for each image type and each file type (see section 5). Section 4.8.1 gives details of how to specify this.

Note that the age of file calculated when cleaning up refers to the time the image was taken, not the time it was received by you. Sometimes this can be a day later.

I suggest:

- Derived JPG/thumbnil/**DIMAT**/uncompressed **N1** files.

Since they occupy a lot of space, and because the original compressed **N1.gz** data files will still be available, it's probably a good idea to tidy up these files frequently, after you have finished looking at the most recent. Normally there won't be many uncompressed **N1** files lying around, but some programs can leave them

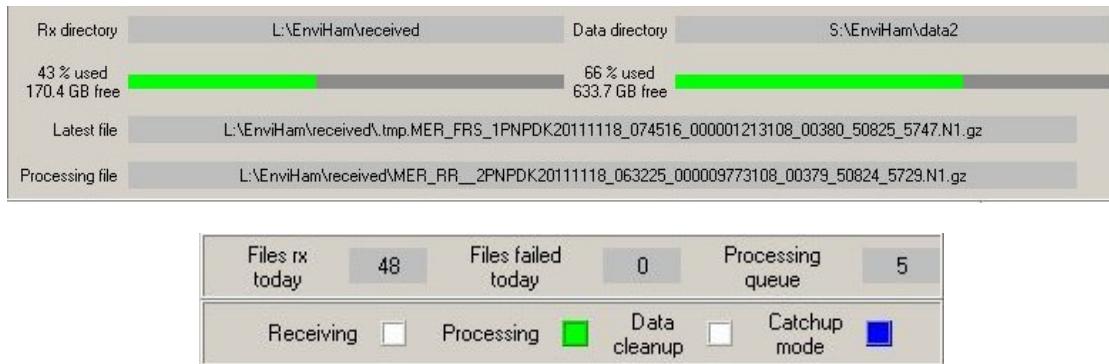
- Raw compressed **N1.gz** data files, as received.

How frequently you clean these files up is really up to you as to how long you wish to keep things. However, **EnviHamBrowse** allows you to browse images and archive those which you wish to keep, which you may find useful.

Cleanup only occurs in the currently-specified data directory. If you have changed this (see section 4.8.1.3), cleanup will not occur in the previous one.

4.5. Status Panel

As EnviHamManager is intended for continuous operation, there are no controls as such - only a status panel.



The disk utilisation scales show green for 0-74%, yellow for 75-89%, and red for 90-100%.

Latest file shows that most-recent file found in the receiving directory (normally the latest to be received).

Processing file is the file currently being processed, if any.

Once reception starts, a file prefixed **.tmp.** should appear in the reception directory. When detected, the **Receiving** indicator will light. When reception has finished, assuming that it didn't fail, **Receiving** will go out and processing of the file will commence, as shown by the **Processing** indicator.

To save computer load, only one file is processed at a time, so that other files may be received simultaneously. Because a queue of files to be processed can build up if catchup mode (see section 4.3) is used with several older files, the number of files in the queue is displayed in, not surprisingly, **Processing queue**. Further details of the queue are displayed in the **Processing status** tab - see section 4.6.3.

Data cleanup shows that deletion of unwanted files is in progress (see section 4.4).

Catchup mode shows if it has been selected (see section 4.3).

Note that the counts **Files rx today** and **Files failed today** are maintained from the data in the DDS files received log, and are only updated once an hour on the hour. Thus these counts may appear to lag a little.

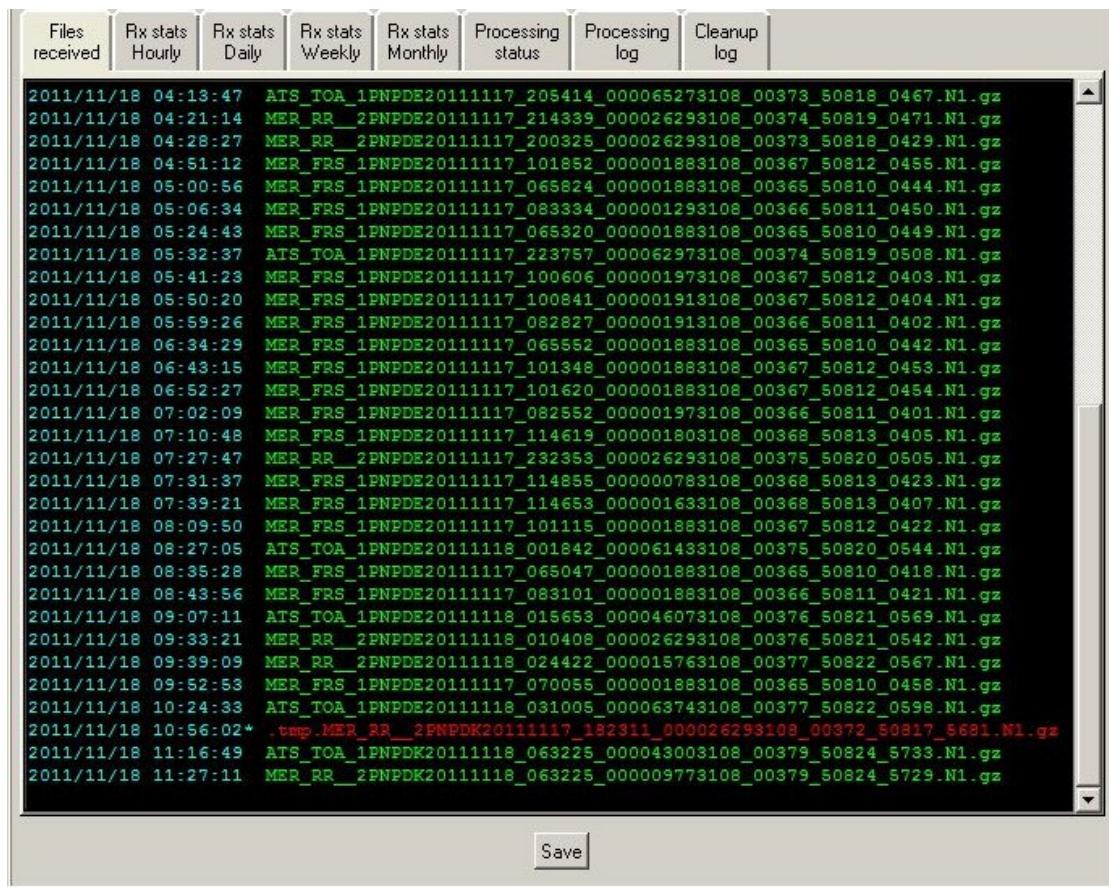
4.6. Logs and Statistics Display

Under the status panel is a set of tabbed displays, containing either logs or statistics graphs. Note that each log display is limited to the last 1000 lines.

The **Save** button allows you to save the contents of the currently-displayed log as a text file, or statistics graph as a jpg file.

4.6.1. Files received

This shows, er, a list of the files received, similar to the display on the DDS software. Timestamps refer to the time reception of the file finished at your station.



File	Timestamp	File Name
2011/11/18	04:13:47	ATS_TOA_1PNPDE20111117_205414_000065273108_00373_50818_0467.N1.gz
2011/11/18	04:21:14	MER_RR_2PNPDE20111117_214339_000026293108_00374_50819_0471.N1.gz
2011/11/18	04:28:27	MER_RR_2PNPDE20111117_200325_000026293108_00373_50818_0429.N1.gz
2011/11/18	04:51:12	MER_FRS_1PNPDE20111117_101852_000001883108_00367_50812_0455.N1.gz
2011/11/18	05:00:56	MER_FRS_1PNPDE20111117_065824_000001883108_00365_50810_0444.N1.gz
2011/11/18	05:06:34	MER_FRS_1PNPDE20111117_083334_000001293108_00366_50811_0450.N1.gz
2011/11/18	05:24:43	MER_FRS_1PNPDE20111117_065320_000001883108_00365_50810_0449.N1.gz
2011/11/18	05:32:37	ATS_TOA_1PNPDE20111117_223757_000062973108_00374_50819_0508.N1.gz
2011/11/18	05:41:23	MER_FRS_1PNPDE20111117_100606_000001973108_00367_50812_0403.N1.gz
2011/11/18	05:50:20	MER_FRS_1PNPDE20111117_100841_000001913108_00367_50812_0404.N1.gz
2011/11/18	05:59:26	MER_FRS_1PNPDE20111117_082827_000001913108_00366_50811_0402.N1.gz
2011/11/18	06:34:29	MER_FRS_1PNPDE20111117_065552_000001883108_00365_50810_0442.N1.gz
2011/11/18	06:43:15	MER_FRS_1PNPDE20111117_101348_000001883108_00367_50812_0453.N1.gz
2011/11/18	06:52:27	MER_FRS_1PNPDE20111117_101620_000001883108_00367_50812_0454.N1.gz
2011/11/18	07:02:09	MER_FRS_1PNPDE20111117_082552_000001973108_00366_50811_0401.N1.gz
2011/11/18	07:10:48	MER_FRS_1PNPDE20111117_114619_000001803108_00368_50813_0405.N1.gz
2011/11/18	07:27:47	MER_RR_2PNPDE20111117_232353_000026293108_00375_50820_0505.N1.gz
2011/11/18	07:31:37	MER_FRS_1PNPDE20111117_114855_000000783108_00368_50813_0423.N1.gz
2011/11/18	07:39:21	MER_FRS_1PNPDE20111117_114653_000001633108_00368_50813_0407.N1.gz
2011/11/18	08:09:50	MER_FRS_1PNPDE20111117_101115_000001883108_00367_50812_0422.N1.gz
2011/11/18	08:27:05	ATS_TOA_1PNPDE20111118_001842_000061433108_00375_50820_0544.N1.gz
2011/11/18	08:35:28	MER_FRS_1PNPDE20111117_065047_000001883108_00365_50810_0418.N1.gz
2011/11/18	08:43:56	MER_FRS_1PNPDE20111117_083101_000001883108_00366_50811_0421.N1.gz
2011/11/18	09:07:11	ATS_TOA_1PNPDE20111118_015653_000046073108_00376_50821_0569.N1.gz
2011/11/18	09:33:21	MER_RR_2PNPDE20111118_010408_000026293108_00376_50821_0542.N1.gz
2011/11/18	09:39:09	MER_RR_2PNPDE20111118_024422_0000015763108_00377_50822_0567.N1.gz
2011/11/18	09:52:53	MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.N1.gz
2011/11/18	10:24:33	ATS_TOA_1PNPDE20111118_031005_000063743108_00377_50822_0598.N1.gz
2011/11/18	10:56:02*	.tmp.MER_RR_2PNPDK20111117_182311_000026293108_00372_50817_5681.N1.gz
2011/11/18	11:16:49	ATS_TOA_1PNPDK20111118_063225_000043003108_00379_50824_5733.N1.gz
2011/11/18	11:27:11	MER_RR_2PNPDK20111118_063225_000009773108_00379_50824_5729.N1.gz

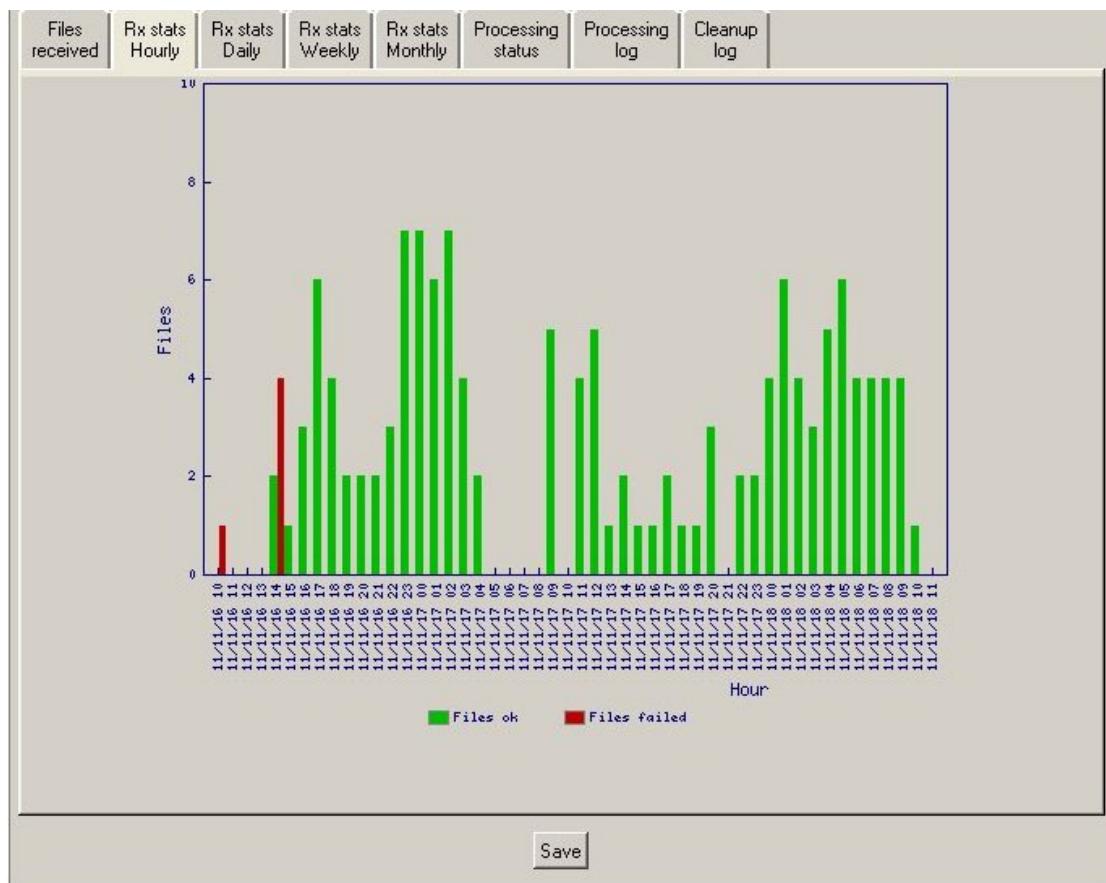
EnviHamBrowse can detect certain files for which reception has failed, and these are shown in red. This is done but detecting a file prefixed **.tmp.** which is not immediately followed by the same file missing the **.tmp.** prefix, meaning that reception has failed. Some failures may be missed because files are only scanned every minute, and therefore a **.tmp.** file which lasts for less than one minute may be missed.

The **Files failed today** count is maintained from the data in the DDS files received log, and will therefore always be correct.

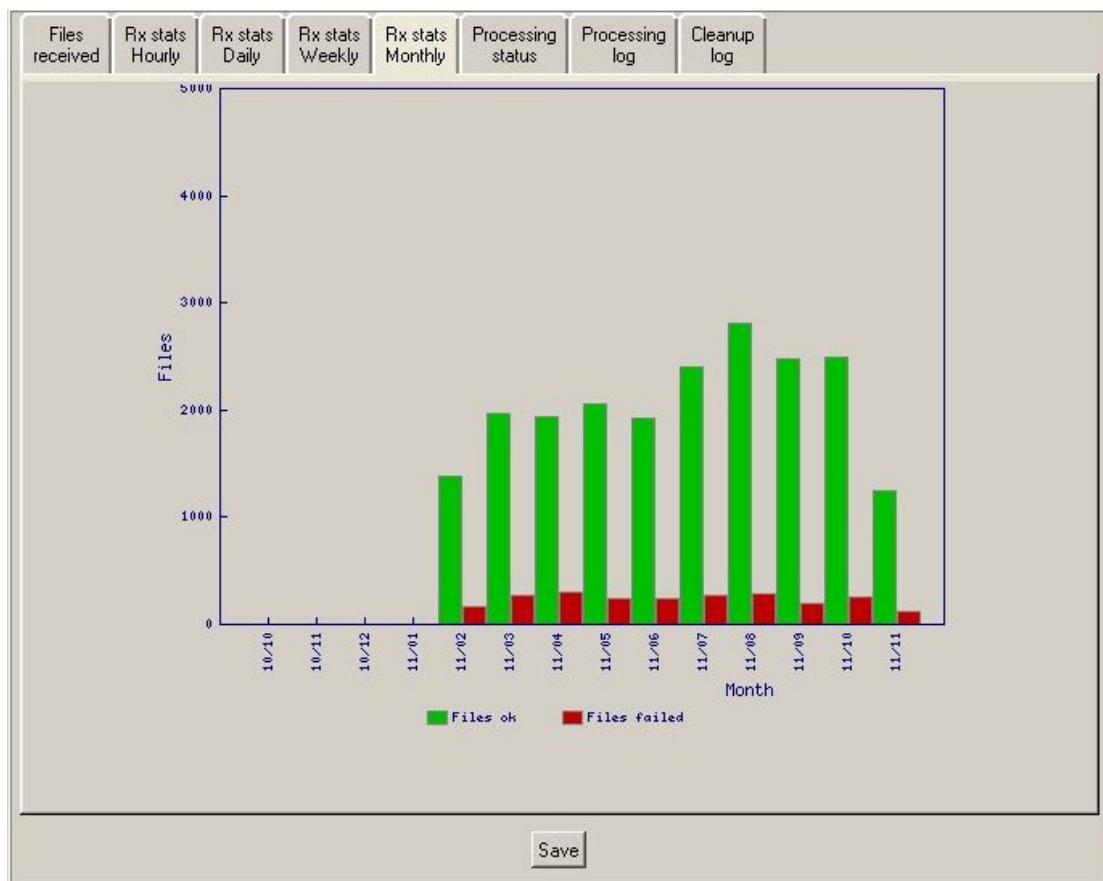
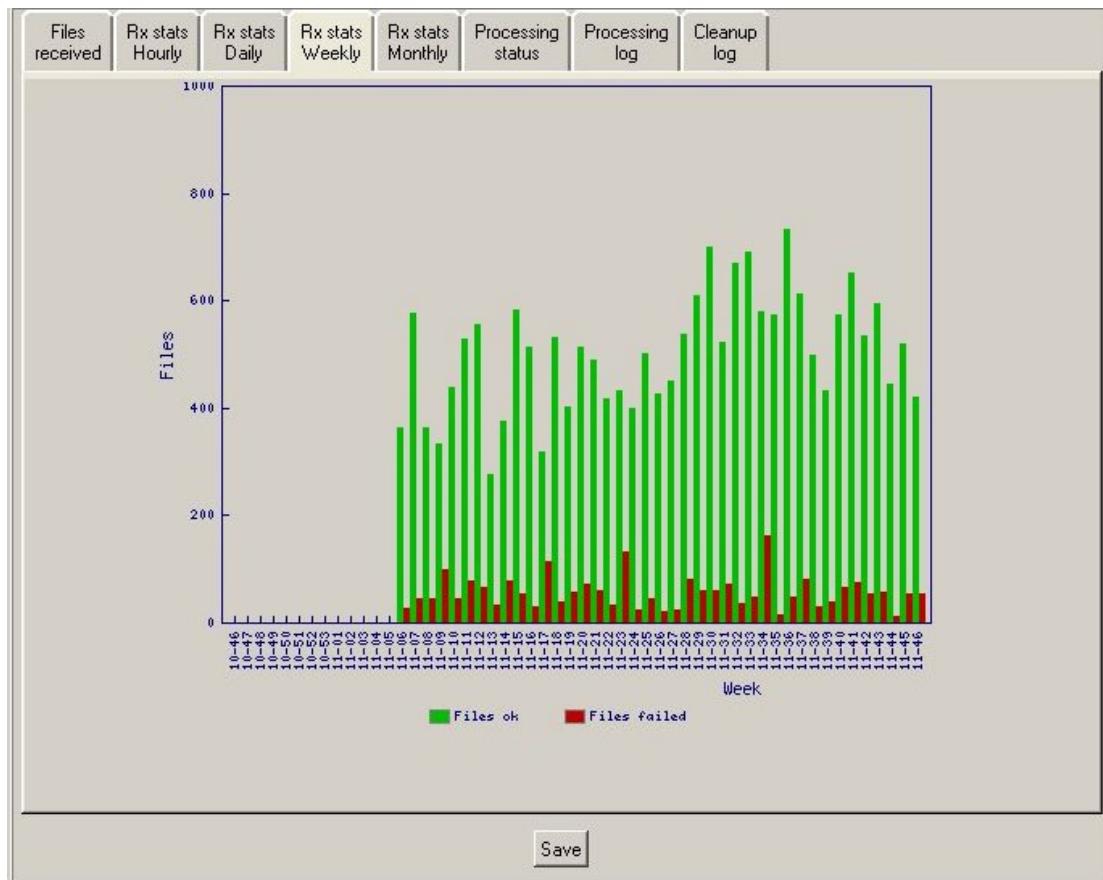
4.6.2. Statistics

Reception statistics are provided showing counts of files received successfully (green) and failed (red), summed over various periods:

- Hourly for the last two days.
- Daily for the last month.
- Weekly for the last year.
- Monthly for the last year.

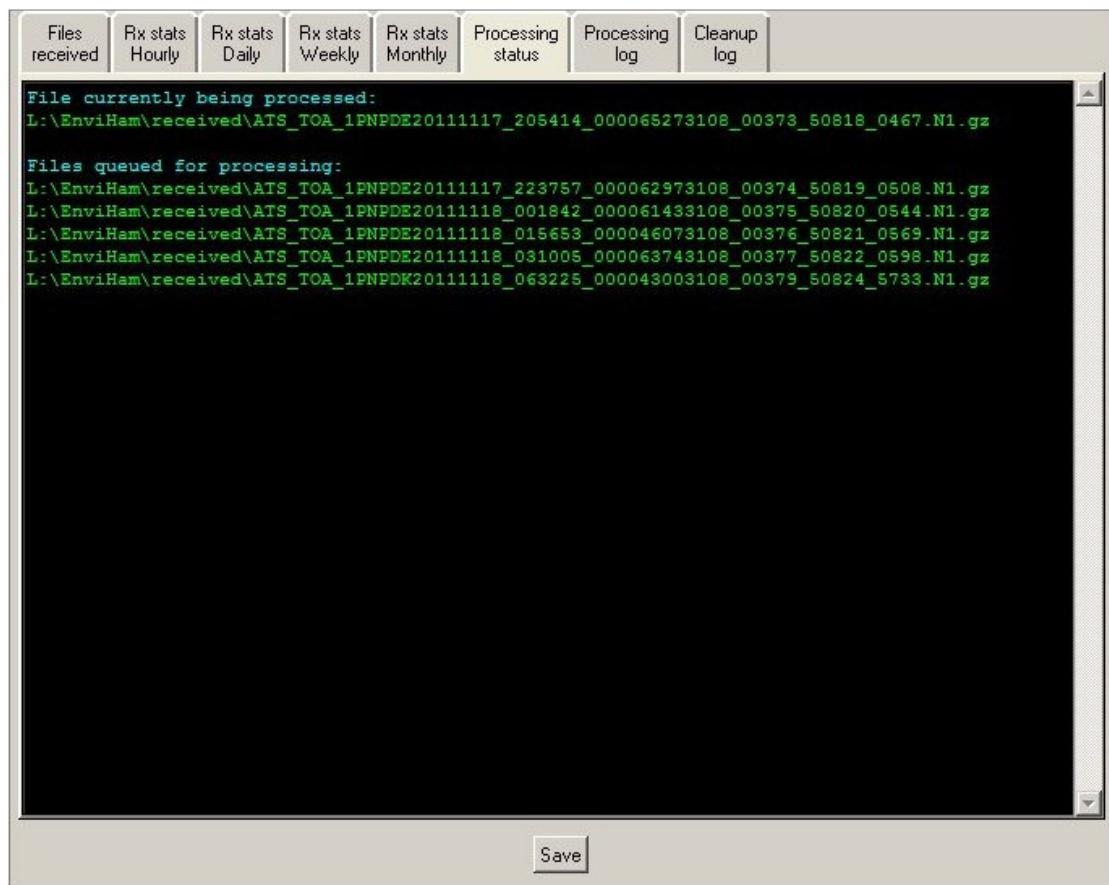


Save



4.6.3. Processing status

Shows the status of the processing queue (see section 4.5). Normally there won't be much in it unless heavy use if being made of catchup mode.



The screenshot shows a window titled 'Processing status' with a menu bar. The menu bar includes 'File', 'Edit', 'View', 'Tools', and 'Help'. Below the menu bar is a toolbar with buttons for 'Files received', 'Rx stats Hourly', 'Rx stats Daily', 'Rx stats Weekly', 'Rx stats Monthly', 'Processing status', 'Processing log', and 'Cleanup log'. The main window contains a text area with the following content:

```
File currently being processed:  
L:\EnviHam\received\ATS_TOA_1PNPDE20111117_205414_000065273108_00373_50818_0467.N1.gz  
  
Files queued for processing:  
L:\EnviHam\received\ATS_TOA_1PNPDE20111117_223757_000062973108_00374_50819_0508.N1.gz  
L:\EnviHam\received\ATS_TOA_1PNPDE20111118_001842_000061433108_00375_50820_0544.N1.gz  
L:\EnviHam\received\ATS_TOA_1PNPDE20111118_015653_000046073108_00376_50821_0569.N1.gz  
L:\EnviHam\received\ATS_TOA_1PNPDE20111118_031005_000063743108_00377_50822_0598.N1.gz  
L:\EnviHam\received\ATS_TOA_1PNPDK20111118_063225_000043003108_00379_50824_5733.N1.gz
```

At the bottom of the window is a 'Save' button.

4.6.4. Processing log

Shows the logs generated by **pconvert** when doing **DIMAT** or **JPG** conversions. They may be of interest if something goes wrong. Don't worry too much - the program seems very pessimistic, and a lot of the errors can be ignored.

In particular, I always get

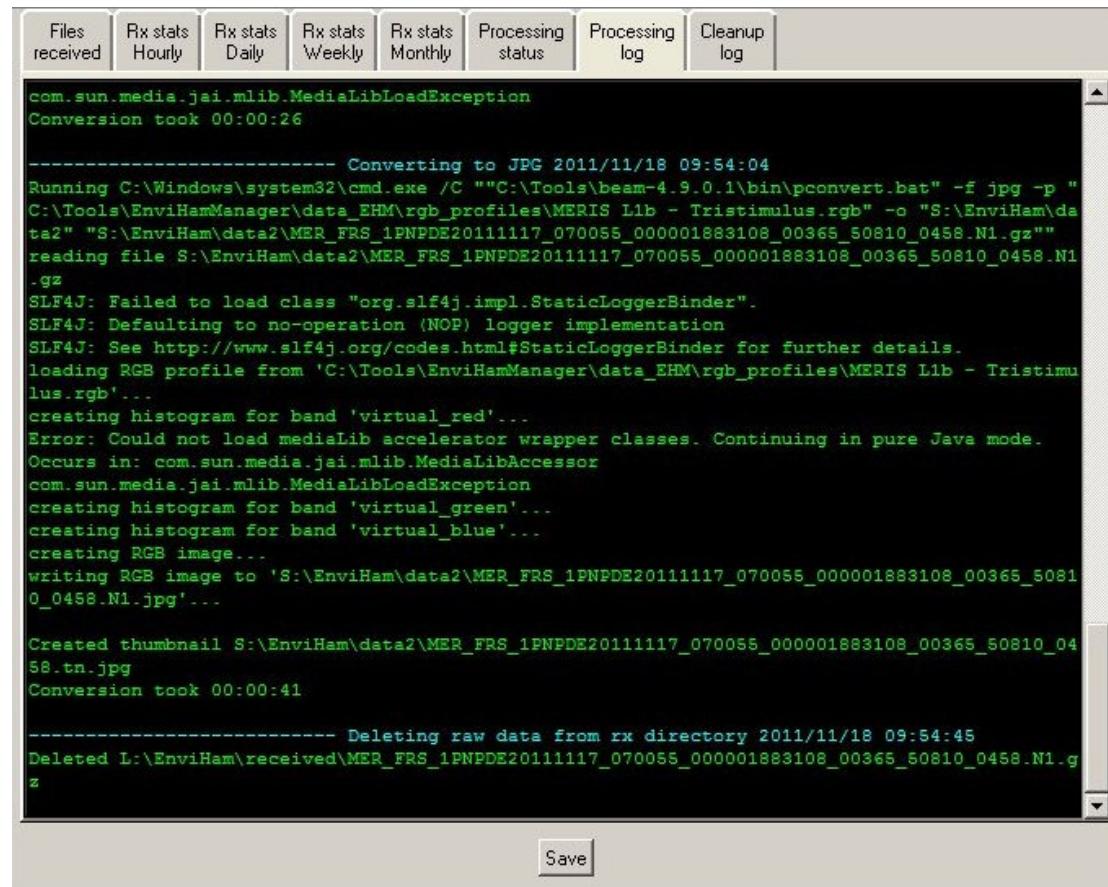
```
Error: Could not load mediaLib accelerator wrapper classes.  
Continuing in pure Java mode.
```

which may be generic to Windows. It makes no difference.

Unfortunately, a bug in the version of pconvert supplied with BEAM/VISAT 4.8 causes it to fail JPG conversions with some profiles - see <http://www.brockmann-consult.de/beam-jira/browse/BEAM-1200>. Additionally it fails with ATS files.

Therefore please upgrade to BEAM/VISAT 4.9.0.1 (or later) which seems to fix these problems. It can be downloaded from [6].

Additionally, if the receiving and data directories are different (see 3.3), information will be logged about the transfer of files from receiving to data (not shown in the figure).



```
com.sun.media.jai.mllib.MediaLibLoadException  
Conversion took 00:00:26  
  
----- Converting to JPG 2011/11/18 09:54:04  
Running C:\Windows\system32\cmd.exe /C ""C:\Tools\beam-4.9.0.1\bin\pconvert.bat" -f jpg -p "C:\Tools\EnviHamManager\data_EHM\rgb_profiles\MERIS_L1b - Tristimulus.rgb" -o "S:\EnviHam\data2" "S:\EnviHam\data2\MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.N1.gz""  
reading file S:\EnviHam\data2\MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.N1.gz  
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".  
SLF4J: Defaulting to no-operation (NOP) logger implementation  
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.  
loading RGB profile from 'C:\Tools\EnviHamManager\data_EHM\rgb_profiles\MERIS_L1b - Tristimulus.rgb'...  
creating histogram for band 'virtual_red'...  
Error: Could not load mediaLib accelerator wrapper classes. Continuing in pure Java mode.  
Occurs in: com.sun.media.jai.mllib.MediaLibAccessor  
com.sun.media.jai.mllib.MediaLibLoadException  
creating histogram for band 'virtual_green'...  
creating histogram for band 'virtual_blue'...  
creating RGB image...  
writing RGB image to 'S:\EnviHam\data2\MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.N1.jpg'...  
  
Created thumbnail S:\EnviHam\data2\MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.tn.jpg  
Conversion took 00:00:41  
  
----- Deleting raw data from rx directory 2011/11/18 09:54:45  
Deleted L:\EnviHam\received\MER_FRS_1PNPDE20111117_070055_000001883108_00365_50810_0458.N1.gz
```

4.6.5. Cleanup log

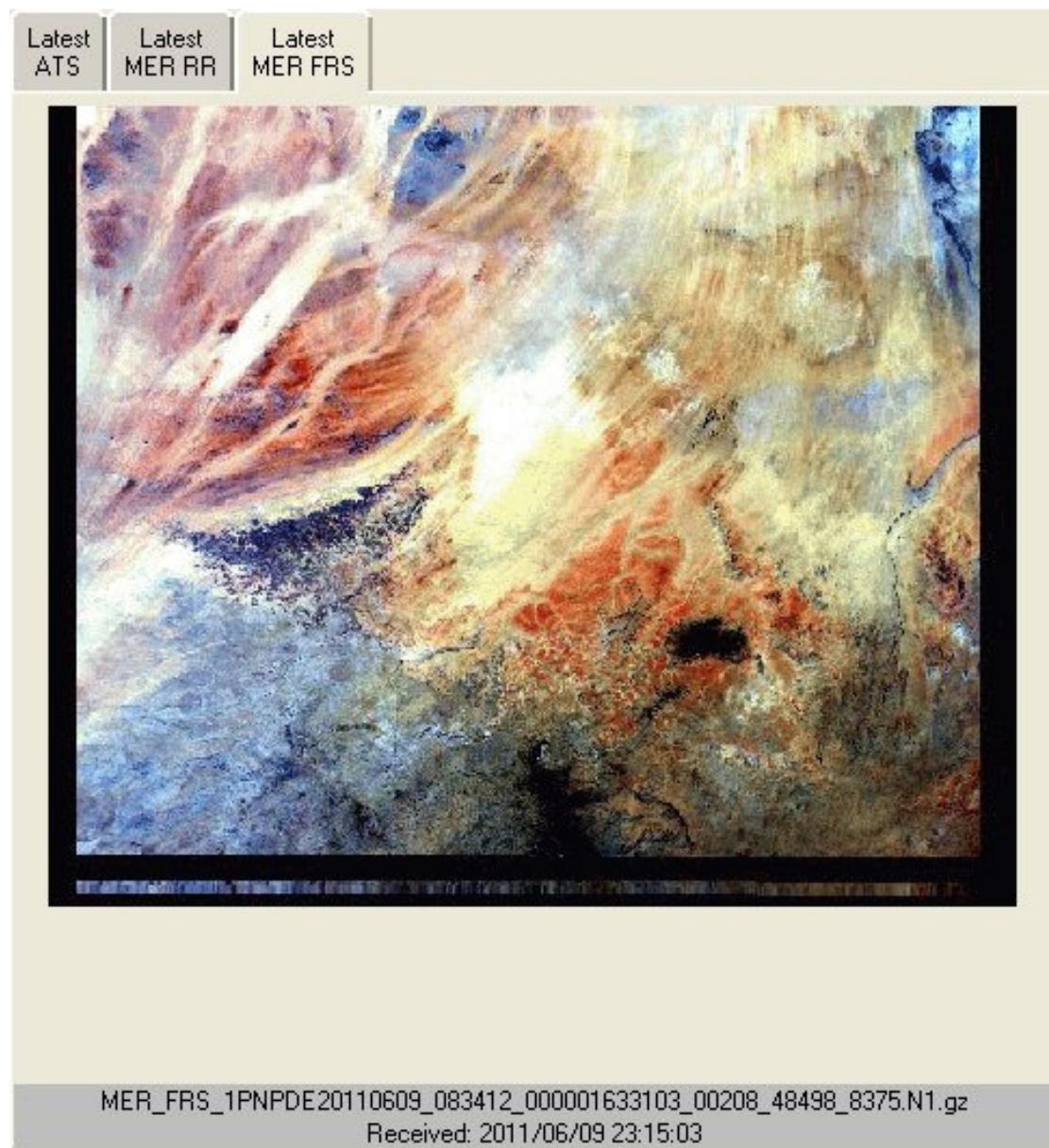
Shows the results of a cleanup session. Files deleted successfully are shown in black; any which failed to delete are shown in red.

Files received	Rx stats Hourly	Rx stats Daily	Rx stats Weekly	Rx stats Monthly	Processing status	Processing log	Cleanup log
<pre>----- Deleting files matching ^MER_RR.*\N1\$ older than 1 days in S:\EnviHam\data2 2011/1 1/18 11:02:22 ----- Deleting files matching ^MER_FRS.*\dim\$ older than 3 days in S:\EnviHam\data2 2011 /11/18 11:02:26 MER_FRS_1PNPDE20111114_065259_000002023108_00322_50767_9324.N1.data MER_FRS_1PNPDE20111114_065259_000002023108_00322_50767_9324.N1.dim MER_FRS_1PNPDE20111114_065538_000001973108_00322_50767_9327.N1.data MER_FRS_1PNPDE20111114_065538_000001973108_00322_50767_9327.N1.dim MER_FRS_1PNPDE20111114_065814_000001913108_00322_50767_9328.N1.data MER_FRS_1PNPDE20111114_065814_000001913108_00322_50767_9328.N1.dim MER_FRS_1PNPDE20111114_070048_000001883108_00322_50767_9329.N1.data MER_FRS_1PNPDE20111114_070048_000001883108_00322_50767_9329.N1.dim MER_FRS_1PNPDE20111114_070321_000001883108_00322_50767_9332.N1.data MER_FRS_1PNPDE20111114_070321_000001883108_00322_50767_9332.N1.dim MER_FRS_1PNPDE20111114_070553_000001883108_00322_50767_9333.N1.data MER_FRS_1PNPDE20111114_070553_000001883108_00322_50767_9333.N1.dim MER_FRS_1PNPDE20111114_070824_000001883108_00322_50767_9334.N1.data MER_FRS_1PNPDE20111114_070824_000001883108_00322_50767_9334.N1.dim MER_FRS_1PNPDE20111114_071056_000001883108_00322_50767_9335.N1.data MER_FRS_1PNPDE20111114_071056_000001883108_00322_50767_9335.N1.dim MER_FRS_1PNPDE20111114_071327_000001913108_00322_50767_9337.N1.data MER_FRS_1PNPDE20111114_071327_000001913108_00322_50767_9337.N1.dim MER_FRS_1PNPDE20111114_071559_000001943108_00322_50767_9338.N1.data MER_FRS_1PNPDE20111114_071559_000001943108_00322_50767_9338.N1.dim MER_FRS_1PNPDE20111114_071831_000000873108_00322_50767_9339.N1.data MER_FRS_1PNPDE20111114_071831_000000873108_00322_50767_9339.N1.dim MER_FRS_1PNPDE20111114_083313_000002023108_00323_50768_9350.N1.data MER_FRS_1PNPDE20111114_083313_000002023108_00323_50768_9350.N1.dim MER_FRS_1PNPDE20111114_083552_000001973108_00323_50768_9351.N1.data MER_FRS_1PNPDE20111114_083552_000001973108_00323_50768_9351.N1.dim</pre>							
<input type="button" value="Save"/>							

4.7. Thumbnails Display

Also under the status panel is a set of tabbed displays, showing thumbnails of the latest file of each type to be received. *Note that thumbnails will only be shown if automatic conversion to JPG format (see section 4.8.1.2) is enabled.*

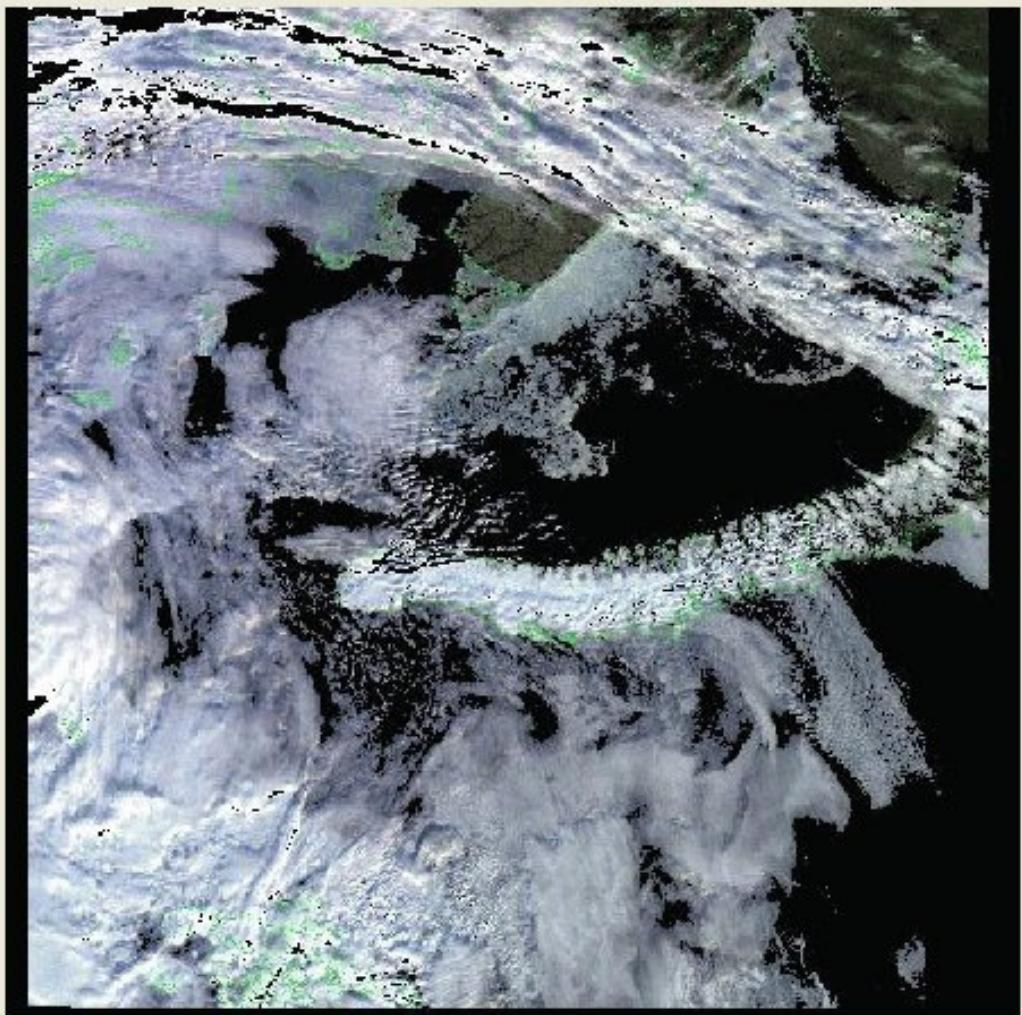
The thumbnail for file type **ATS** is not very useful because the image is so long and thin; however, it is included for completeness.



Latest
ATS

Latest
MER RR

Latest
MER FRS



MER_RR__2PNPDK20110608_152800_000001973103_00198_48488_7070.N1.gz

Received: 2011/06/09 17:20:44

Latest
ATS

Latest
MER RR

Latest
MER FRS



ATS_TOA_1PNPDK20110609_071045_000042233103_00207_48497_7348.N1.gz

Received: 2011/06/09 19:21:13

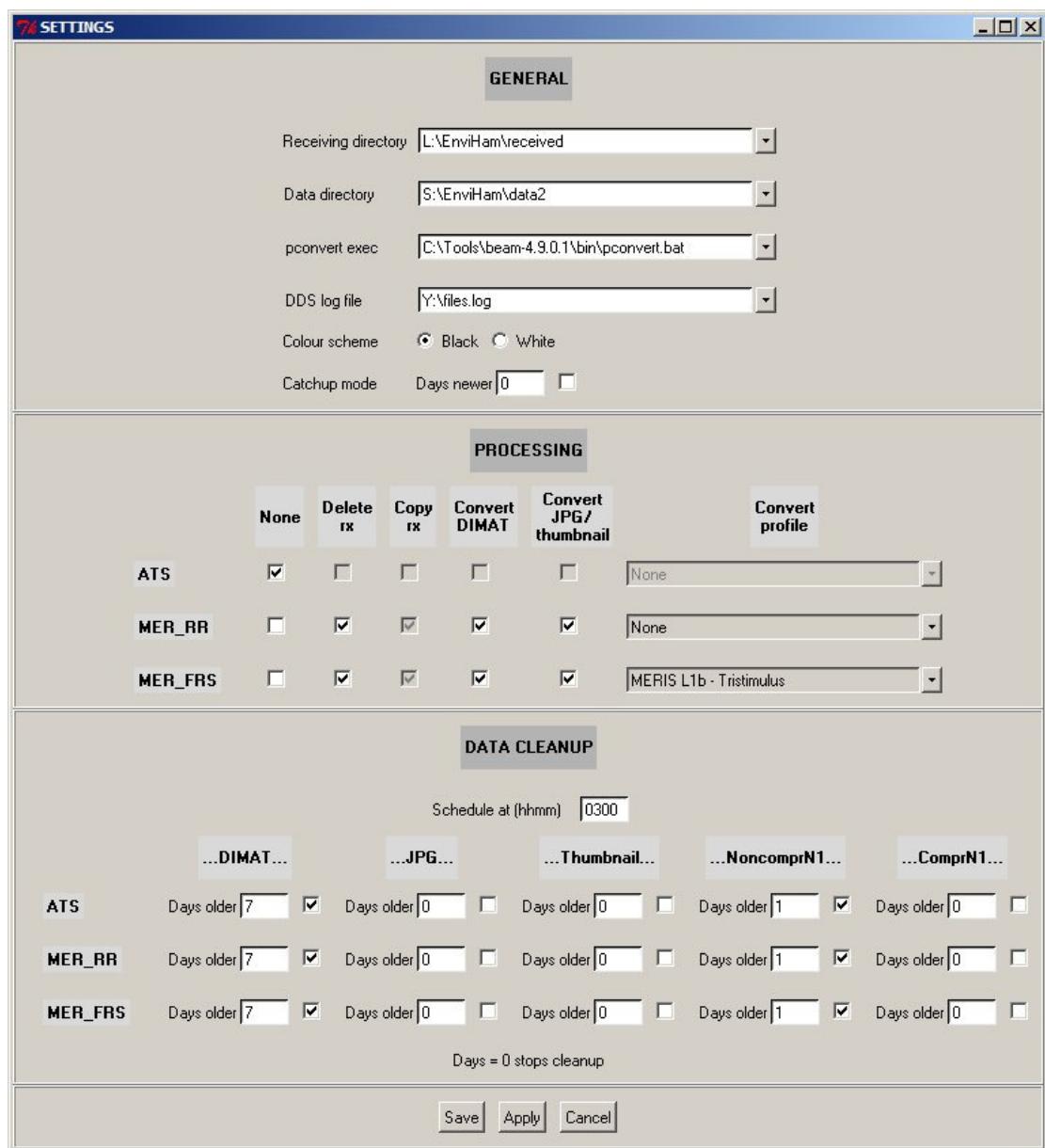
4.8. Menus

Not a lot to say really.

Files Exit	I wonder...
Settings	Brings up the Settings popup - see section 4.8.1.
Help About	List version information. For actual usage help, you'll have to look at the file you're currently reading.

4.8.1. Settings Popup

Brought up by the **Settings** menu.



4.8.1.1. GENERAL section

Receiving directory	Location of your received files - see section 3.3.
Data directory	Location to put received and processed files - see section 3.3.
pconvert exec	Location of the pconvert executable file - see section 3.3.
DDS log file	Location of the DDS file reception log file - see section 3.3. This will always be named files.log , but its location may vary depending on where you installed the DDS software.
Colour scheme	Select either black or white (background) for the log tabs. White uses the original scheme.
Catchup mode	Catchup mode (see 4.3) is enabled if ticked. Only files newer than the specified ago in days (based on the time the image was taken, <u>not</u> the time it was received by you) will be processed. Setting the age to zero will disable catchup mode - thus the age must be set ≥ 1 before the tick can be set (which will happen automatically anyway). I recommend leaving it set to at least 1 day.

4.8.1.2. PROCESSING section

Allows you to select what processing is to be done on each image type and file type (see section 5). Some combinations of processing are contradictory and will be blocked (e.g. if you select **None**, then no other processing can be selected), or are mandatory (e.g. if you select **Convert**, then **Copy rx** is automatically selected).

Processing operations are:

None	Obvious
Delete rx	The original received compressed N1 file will be deleted (after copying from the receiving to the data directory if Copy rx is selected). Can be used on its own to get rid of unwanted files without further processing. Has no effect if the receiving and data directories are the same and Copy rx is selected.
Copy rx	Copy files from the receiving to the data directory. Has no effect if the receiving and data directories are the same. Automatically selected if either of the Convert operations are selected.
Convert DIMAT	Convert the file to DIMAT format suitable for quicker input to VISAT.

Convert JPG/ thumbnail	Convert the file to full-size JPG and a thumbnail JPG.
	Recommended that you do not disable this as EnvHamBrowse Uses both for easy browsing.
Convert profile	JPG conversion profiles applied - see section 4.2. User-generated profiles will be suffixed (user) .

4.8.1.3. DATA CLEANUP section

Schedule at	Time in the form hhmm when data cleanup will be run. It will only be run once every 24 hours - sometime overnight is probably a good idea.
--------------------	---

Cleanup will be performed on files which have ages in days greater than those specified (based on the time the image was taken, not the time it was received by you). Setting the age to zero will disable cleanup - thus the age must be set ≥ 1 before the tick can be set (which will happen automatically anyway).

Different ages may be specified for each image type and file type (see section 5).

Other deletion criteria may be added in the future - suggestions are welcomed.

4.8.1.4. Action buttons

Save	Save the settings in the .ini file and quit the popup.
Apply	Apply the settings to the current program but don't save them. Quit the popup.
Cancel	Give up without doing anything.

Values will be checked for validity, and you will not be allowed to **Save** or **Apply** them if they are incorrect. You will be told what is wrong, unlike some software!

5. File and Image Types

EnviHamManager deals with a number of different file types, each of which may hold different types of image. They are listed here as a number of the processing options of **EnviHamManager** apply to them individually.

5.1. File Types

- **Compressed N1 (file extension .N1.gz)**

These are the raw Envisat files received from DDS. They are compressed versions of the Envisat **N1** data files.

- **Uncompressed N1 (file extension .N1)**

N1 files are the native format developed by ESA for storing and disseminating data from Envisat. Not generally found since **EnviHamManager** will normally delete them automatically, but sometimes **VISAT** can leave them behind.

- **DIMAT (file extension .dim, plus an associated directory with extension .data)**

Partially-processed **N1** files. This is the native format used by **VISAT**. It is quickest for **VISAT** to load, and therefore **EnviHamManager** automatically generates them.

- **JPG (file extension .JPG)**

Full-size JPG image file automatically generated from the **Compressed N1** file by **EnviHamManager**. Much easier to view than using **VISAT**. The companion program **EnviHamBrowse** uses JPG and thumbnails for easy browsing.

- **Thumbnail (file extension .tn.JPG)**

Small-scale JPG image file.

5.2. Image Types

At the moment, EnviHam transmits 3 types of image:

- **ATS**
AATSR (Advanced Along Track Scanning Radiometer) instrument level 1 gridded brightness temperature and reflectance
- **MER RR**
MERIS (Medium Resolution Imaging Spectrometer) instrument level 2 reduced resolution geophysical product
- **MER FRS**
MERIS instrument level 1B full resolution European coverage

A lot more detail about these topics can be found in [4].

6. Command Line Options

When **EnviHamManager.exe** is started, it is possible to add options to the command line. They're probably not generally useful. However, if you have a need, you can always edit the desktop shortcut so that they are always specified.

-node1 Prevents cleanup actually deleting files, although those it would have deleted will be shown in green in the log. Useful for testing if you want to check your criteria before actually trashing anything.

Additionally, if the receiving and data directories are different (see section 3.3), received files will be copied to the data directory but not deleted from the receiving. They will be show in yellow in the conversion log.

7. Change History

0.2.7 111117

- Finer control over cleanup & processing settings.
- Option to delete raw files without processing.
- Log pages now have choice of colour scheme.
- Settings validation improved.
- Settings popup layout improved.
- Add catchup mode.
- Add processing file display + queue size and status window.
- Fix bug which would prevent startup if an initial directory was dud.

0.2.6 110810

- Trap pconvert JPG conversion failure to prevent crash (happens with overlong ATS files).
- Trap missing file in fileAge.

0.2.5 110721

- Add disk utilisation scales.

0.2.4 110623

- Allow for separate receiving directory (cf EUMETCast software).
- JPG files could sometime be held open, thereby preventing their deletion.
- Update VISAT executable default locations.
- Increase converter timeout from 600 to 1200 s.
- Conversion log shows conversion run time.

0.2.3 110608 (incorrectly titled 0.2.2, although the date is correct)

- Increase thumbnail size to 600.
- Add last received thumbnail display.
- Reenable file failure reporting (not exhaustive as a short-lived tmp may be missed in a scan cycle):
 - Check to see if a tmp file is still current but it or its permanent version no longer exists, in which case exit rx mode. Probably rx has failed and it has been deleted without anything coming in behind it.
 - Check that file following a tmp is its permanent version.

0.2.2 110518

- Add command line to conversions log.
- Correct stats file counts if nothing received today.
- Add Save button to all log/stats pages.
- Create thumbnail at same time as jpg.
- Remove disabled 'In area' field in Data Cleanup Settings and associated ini settings.dataArea.

0.2.1 110505

- Fix problem in converter whereby dirname returns E:\ from E:\file.

0.2.0 110503

- Add reception statistics graphs.
- Remove original failure detection..

0.1.0 110430

- Initial issue.

8. Legal Stuff

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For details of the GNU General Public License see

<http://perldoc.perl.org/perlgpl.html>

or write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

9. Links and References

- [1] My www site
<http://www.elnath.org.uk> (please note new URL)
- [2] EnviHam
http://dwlinkdvb.esrin.esa.it/DDS/docs/Public_Docs/EnviHam_abstract.pdf
- [3] Envisat Operations
http://www.esa.int/SPECIALS/Operations/SEMOZY8L6VE_0.html
- [4] Envisat Documents
http://earth.esa.int/pub/ESA_DOC/ENVISAT/
- [5] VISAT/BEAM
<http://www.brockmann-consult.de/cms/web/beam>
- [6] VISAT/BEAM software download
<http://www.brockmann-consult.de/cms/web/beam/software>
- [7] DDS Operations
<http://dwlinkdvb.esrin.esa.it/DDS/welcome.html>
- [8] David Taylor's notes on setting up EnviHam reception
<http://www.satsignal.eu/wxsat/EnvisatDDS/>